

REMARKS

Claims 15-32 are pending in this application. By this Amendment, the specification and claims 15, 19, 23, 27, 30, 31 and 32 are amended. No new matter is added. Reconsideration in light of the Amendments and the following remarks is respectfully requested.

The courtesies extended to Applicant's representative by Examiners Nytko-Lutz and Ridley at the interview held September 16, 2009, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicant's record of the interview.

In the Office Action, the specification and claim 30 are objected to for minor informalities. By this Amendment, the specification and claim 30 are revised to incorporate the Examiner's suggestions. Withdrawal of the objection is respectfully requested.

In the Office Action, claims 15-18 are rejected under 35 U.S.C. §102(b) over U.S. Patent Application Publication No. 2003/0094816 to Kazama; claims 19-22 and 27-30 are rejected under 35 U.S.C. §103(a) over Kazama in view of European Patent Publication No. 1,220,413 to Okhubo et al. ("Okhubo"); claims 23-26 and 31 are rejected under 35 U.S.C. §103(a) over Kazama in view of U.S. Patent Application Publication No. 2003/0177846 to Tamagawa et al. ("Tamagawa"); and claim 32 is rejected under 35 U.S.C. §103(a) over Kazama and Okhubo in view of Tamagawa.¹ These rejections are respectfully traversed.

As discussed during the personal interview, independent claims 15, 19, 23, 27, 31 and 32 each relate to a hybrid fuel cell system, comprising a fuel cell, an electric power storage device, and a load portion that consumes electric power, in which an amount of electric power

¹ In the Office Action, Tamagawa is incorrectly referred to as European Patent Publication No. 1,220,413. However, it is correctly identified on the PTO-892 as U.S. Patent Application Publication No. 2003/0177846.

consumed by the load portion is controlled based on a difference between a supply electric power set value that needs to be supplied from the electric power storage device, and an actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device. Additionally, each of these claims recite that an amount of electric power consumed by the load portion is changed so as to reduce the difference.

In particular, as discussed in Applicant's background section paragraphs [0002] - [0004], to prevent over discharge/overcharge of a battery in a conventional hybrid fuel cell system, remaining capacity is detected and the fuel cell is adjusted to maintain a balance. However, as discussed during the interview, if there is an error in the sensors, an imbalance may occur, making it difficult to maintain optimum efficiency of the electric power generation (Applicant's paragraph [0004]).

To address this, the difference between power supplied and power consumption needs to be reduced. In Applicant's embodiments, a "load portion" provides an electric power consumption source that can be controlled to control the amount of power consumed to remove any imbalance. As described in Applicants' paragraphs [0009] - [0016], the load portion is an electric power consumption source and need not be a main electric power consumption source, but instead may be a system accessory, such as a pump, compressor or other device that consumes power or is capable of powering and regeneration of electric power, such as a three phase alternating current motor for driving an accessory. This load portion, such as a three phase motor, is controlled such that its amount of power consumed is based on the difference to remove imbalance between charge and discharge in the electric power storage device in the system (paragraphs [0015] and [0004]).

Independent claims 15, 19, 23, 27, 31 and 32 are each revised to clarify this feature of removing imbalance between charge and discharge based on the difference. This is supported, for example, by Applicant's paragraphs [0004] and [0009] - [0016].

In making the rejections, the Office Action relies on Kazama for disclosing a hybrid fuel cell system comprising a fuel cell (electric power generator 101, in Fig. 1 and paragraph 36); an electric power storage device (electric power storage unit 103, in paragraph [0037]); and a load portion which consumes electric power (vehicle drive motor 104 in paragraph [0037] and Fig. 1).

In making the rejection, the Office Action admits failing to give patentable weight to features considered to be merely process or intended use features. This includes the recitation that the control portion "changes the amount of electric power consumed by the load portion so as to reduce the difference." However, nonetheless, the Office Action generally alleges that a controller 105 controls an amount of electric power consumed by the load portion based on a difference between a supply electric power set value needed and an actual supply electric power value supplied from the electric power storage device. In support of this, the Office Action refers to paragraphs [0041] and [0043] and alleges that an allowable drive electric power output PA, necessary for compensating a delayed response, corresponds to the supply value, and available electric power output PO of electric power storage unit 103 corresponds to the actual supplied power. Also, the Office Action alleges that Tamagawa teaches a desirability to control the upper limit of electricity supplied by a battery through the use of torque control. It is further alleged that this control regulates the amount of electric power consumed by the load portion to not exceed the upper limits of the battery (paragraph 78).

The Examiners alleged that the references tend to show a broad teaching of "control" of a load, and that control of any of the fuel cell, battery or load would result in at least indirect change in the load. However, as argued by Applicant's representative during the

personal interview, there is no teaching in Kazama, Okhura or Tamagawa of control of the load portion consumption to remove an imbalance between the charge and discharge of the electric power storage device based on the difference, as now clarified. Moreover, as none of the references appreciate the problem faced, there is no rationale for modifying teachings of the applied references. For example, as discussed during the personal interview, if the vehicle drive motor in Kazama were "controlled" to reduce the difference, this would change the desired drive acceleration or speed of the vehicle, which would not be desired. However, because the "load portion" recited in Applicant's claims can be a power consuming device different from the main drive motor, such as an accessory such as a pump, this control can be achieved to remove the imbalance without affecting operation of the drive vehicle speed or acceleration.

Accordingly, independent claims 15, 19, 23, 27, 31 and 32, and claims dependent therefrom, distinguish over the applied references. Withdrawal of the rejections is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:SPC/hlp

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